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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHOW, LIXI

ART UNIT

PAPER NUMBER

2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,999	Applicant(s) MAEDA ET AL.	
	Examiner LIXI CHOW	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 10 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 10 and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Wada (US 5,319,198).

Regarding claim 1:

Wada discloses an information recording/reading head for recording information onto tracks of an information recording medium having the tracks with a track pitch of P, or reading information recorded on the tracks of the information recording medium (see Fig. 5 or 6), the information recording/reading head comprising:

a support portion (see Fig. 6B, element 3) ; and

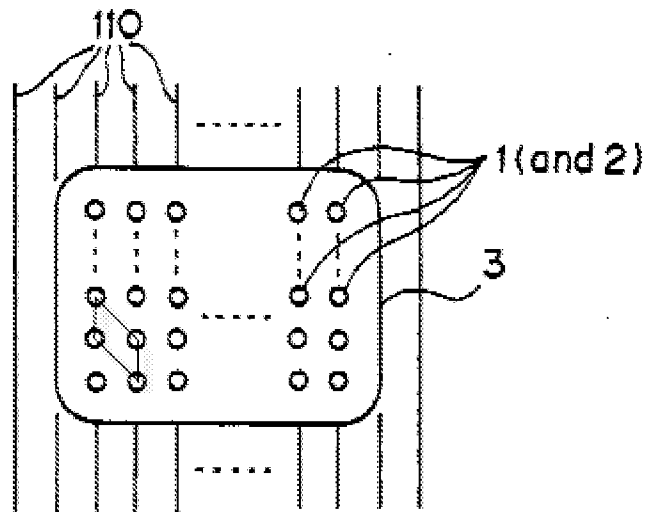
four or more recording/reading elements which are supported by the support portion and which record information onto the tracks of the information recording medium or which read information recorded on the tracks of the information recording medium (see Fig. 6B, there are four or more read heads (represented by reference number 1 and 2) provided on the support portion 3),

at least four of the recording/reading elements being arranged on the support portion such that if the positions of recording/reading end portions of the recording/reading elements are A, B, C, and D, a parallelogram is formed in which a line segment AB connecting A and B is parallel

Art Unit: 2627

to a line segment CD connecting C and D, and a line segment AC connecting A and C is parallel to a line segment BD connecting B and D (see Fig. 6B below; a parallelogram is formed with four recording/reading elements), and that if a ratio of the length of the line segment AB to the length of the line segment AC is η (see Fig. 6B below; the shorter line segment corresponds to line segment AB, and the longer line segment corresponds to line segment AC) and the height of the parallelogram is H when the line segment AC is regarded as a base, the following relationship is satisfied: $H = \eta * P$ (the arrangement shown in Fig. 6B below satisfies this equation), wherein the positions of recording/reading end portions of the recording/reading elements do not form a square lattice (see the drawing in Fig. 6B below).

FIG. 6B



Regarding claim 2:

Wada discloses an information recording/reading head for recording information onto tracks of an information recording medium having the tracks with a track pitch of P, or reading

Art Unit: 2627

reformation recorded on the tracks of the information recording medium (see Fig. 5 or 6), the information recording/reading head comprising:

a support portion (see Fig. 6B, element 3); and

four or more recording/reading elements which are supported by the support portion and which record information onto the tracks of the information recording medium or which read information recorded on the tracks of the information recording medium (see Fig. 6B, there are four or more read heads (represented by reference number 1 and 2) provided on the support portion 3),

at least four of the recording/reading elements being arranged on the support portion such that if the positions of recording/reading end portions of the recording/reading elements are A, B, C, and D, a parallelogram is formed in which a line segment AB connecting A and B is parallel to a line segment CD connecting C and D, and a line segment AC connecting A and C is parallel to a line segment BD connecting B and D (see Fig. 6B above), and that if the length of the line segment AC is L and an angle ACD made by the line segment AC and the line segment CD is α , the following relationship is satisfied: $L \cdot \sin \alpha = P$ ($\sin \alpha = P/L$; and Fig. 6B shows $P/L = \sin 45^\circ$, the equation is satisfied), wherein the positions of recording/reading end portions of the recording/reading elements do not form a square lattice (see the drawing in Fig. 6B above).

Regarding claim 3:

Wada discloses an information recording/reading head for recording information onto tracks of an information recording medium having the tracks with a track pitch of P, or reading information recorded on the tracks of the information recording medium (see Fig. 5 or 6), the information recording/reading head comprising:

a support portion (see Fig. 6B, element 3) ; and

four or more recording/reading elements which are supported by the support portion and which record information onto the tracks of the information recording medium or which read information recorded on the tracks of the information recording medium (see Fig. 6B, there are four or more read heads (represented by reference number 1 and 2) provided on the support portion 3),

at least four of the recording/reading elements being arranged on the support portion such that if the positions of recording/reading end portions of the recording/reading elements are A, B, C, and D, a parallelogram is formed in which a line segment AB connecting A and B is parallel to a line segment CD connecting C and D, and a line segment AC connecting A and C is parallel to a line segment BD connecting B and D (see Fig. 6B above; a parallelogram is formed with four recording/reading elements), and that if a ratio of the length of the line segment AB to the length of the line segment AC is η (see Fig. 6B above; the shorter line segment corresponds to line segment AB, and the longer line segment corresponds to line segment AC) and the height of the parallelogram is H when the line segment AC is regarded as a base, the following relationship is satisfied: $H = m \cdot \eta \cdot P$ (wherein m is a natural number) (the arrangement shown in Fig. 6B above satisfies this equation), wherein the positions of recording/reading end portions of the recording/reading elements do not form a square lattice (see the drawing in Fig. 6B above).

Regarding claim 4:

Wada discloses an information recording/reading head for recording information onto tracks of an information recording medium having the tracks with a track pitch of P, or reading

Art Unit: 2627

reformation recorded on the tracks of the information recording medium (see Fig. 5 or 6), the information recording/reading head comprising:

a support portion (see Fig. 6B, element 3); and

four or more recording/reading elements which are supported by the support portion and which record information onto the tracks of the information recording medium or which read information recorded on the tracks of the information recording medium (see Fig. 6B, there are four or more read heads (represented by reference number 1 and 2) provided on the support portion 3),,

at least four of the recording/reading elements being arranged on the support portion such that if the positions of recording/reading end portions of the recording/reading elements are A, B, C, and D, a parallelogram is formed in which a line segment AB connecting A and B is parallel to a line segment CD connecting C and D, and a line segment AC connecting A and C is parallel to a line segment BD connecting B and D (see Fig. 6B above; a parallelogram is formed with four recording/reading elements), and that if the length of the line segment AC is L and an angle ACD made by the line segment AC and the line segment CD is α , the following relationship is satisfied: $L \cdot \sin \alpha = m \cdot P$ (wherein m is a natural number) ($\sin \alpha = (m \cdot P)/L$; let $m=1$; Fig. 6B shows $P/L = \sin 45^\circ$, the equation is satisfied), wherein the positions of recording/reading end portions of the recording/reading elements do not form a square lattice (see the drawing in Fig. 6B above).

Regarding claim 5:

Wada discloses the information recording / reading head according to claim 1. wherein the at least four recording / reading elements are arranged on the support portion such that if the

Art Unit: 2627

length of the line segment AC is L and the line segment CD is K, the following relationship is satisfied, $(n^2 * K^2 / L^2) + (H^2 / K^2) \neq 1$ (n is a natural number) (if n=2 or higher, the arrangement shown in Fig. 6B above satisfies this equation).

Regarding claim 10:

Wada discloses the information recording/reading head according to claim 1, wherein the recording/reading elements are probes (see Fig. 5B; the head devices shown by elements 1 and 2 are probes that measure/examine the information recorded on the disk).

Regarding claim 22:

Wada discloses the information recording / reading head according to claim 1, wherein two of the at least four recording / reading elements having the end portions A, B, C, and D are configured for recording / reading data to / from a same first track of the information recording medium and the other two of the at least four recording / reading elements are configured for recording / reading data to / from a same second track of the information recording medium which is different than the first track (see Fig. 6B above, the line segment AB is on first track and line segment CD is on second track).

Regarding claims 23-25:

Claims 23-25 recite similar limitation as claim 22; hence, claims 23-25 are rejected under the same reasons set forth above in claim 22.

Response to Arguments

3. Applicant's arguments filed 02/02/10 have been fully considered but they are not persuasive.

Applicant argues that Wada teaches “guns/detectors area arranged to form square lattices and thus do not constitutes a disclosure of the...feature of independent claims 1, 2, 3 and 4”. However, Examiner respectfully disagrees. According to Fig. 6B of Wada, at least four recording/reading elements are capable of being arranged to form a parallelogram that do not form a square lattice (see the drawing in Fig 6B above). Accordingly, claims 1-5, 10 and 22-25 are not patentable over Wade.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIXI CHOW whose telephone number is (571)272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lixi Chow/

Primary Examiner, Art Unit 2627